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1: *J Cell Physiol.* 2007 Jun;211(3):590-7.



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**The regulation of Foxp3 expression in regulatory CD4(+)CD25(+)T cells: Multiple pathways on the road.**

**Zhang L, Zhao Y.**

Transplantation Biology Research Division, State Key Laboratory of Biomembrane and Membrane Biotechnology, Institute of Zoology, Chinese Academy of Sciences, Beijing, China.

Regulatory T cells (Treg cells) have been well documented to have a crucial physiological role in preventing the development of autoimmune diseases and keeping self-tolerance. Foxp3, a recently identified member of the forkhead transcription factors, serves as a master regulator for the development and function of CD4(+)CD25(+)Treg cells. Though it is well defined that Foxp3 expression is sufficient to program CD4(+)CD25(+)Treg cell development, the physiological factors initiating intracellular Foxp3 expression remain poorly understood so far. In the present manuscript, we try to summarize the recent advances regarding the regulatory roles of T-cell receptor (TCR), co-stimulatory molecules, interleukin-2 (IL-2), transforming growth factor-beta (TGF-beta) and beyond pathways on Foxp3 expression. *J. Cell. Physiol.* 211: 590-597, 2007. (c) 2007 Wiley-Liss, Inc.

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Conversion of peripheral CD4+CD25- naive T cells to CD4+CD25+ regulatory T cells by TGF-beta induction of transcription factor Foxp3. *[J Exp Med. 2003]*

Crucial role of FOXP3 in the development and function of human CD25+CD4+ regulatory T cells. *[Am J Transplant. 2004]*

TGF-beta induces Foxp3 + T-regulatory cells from CD4 + CD25 - precursors. *[Am J Transplant. 2004]*

Foxp3-dependent and -independent molecules specific for CD25+CD4+ natural regulatory T cells revealed by DNA microarray. *[Biol Analysis. 2006]*

Retroviral Foxp3 gene transfer ameliorates liver granuloma pathology in Schistosoma mansoni infected mice. *[Immunology. 2005]*

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